Claims

What is claimed is:

1. A method for detecting a connection polarity of a network transmission line, one terminal of the network transmission line connected to a connection port, the network transmission line comprising a first transmission line and a second transmission line; the method comprising:

the connection port counting a first number of signals transmitted via the first transmission line during a predetermined interval;

the connection port counting a second number of signals transmitted via the second transmission line during said predetermined interval;

the connection port determining that the connection polarity of the network transmission line is correct when a difference between the first number and the second number is less than a threshold value; and

the connection port determining that the connection polarity of the network transmission line is inverted when a difference between the first number and the second number is greater than a threshold value.

[c2] 2. The method of claim 1 further comprising switching the first transmission line and the second transmission line connected to the connection port when the connection polarity of the network transmission line is inverted.

[c3] 3. The method of claim 1 wherein the network transmission line is used for transmitting a 100Base-T signal.

[c4] 4. The method of claim 3 wherein the 100Base-T signal is an MLT-3 coded signal.

[c5] 5. The method of claim 1 further comprising comparing voltage levels of signals transmitted via the network transmission line with a predetermined level for generating the first number and the second number.

[c6] 6. The method of claim 1 further comprising transforming each signal transmitted via the network transmission line into a pulse signal for counting the first number and the second number.

[c7] 7. The method of claim 6 wherein said transforming step comprises using a

Schmitt trigger for transforming each signal transmitted via the network transmission line into the pulse signal.

[c8]   8. A method for detecting a connection polarity of a network transmission line comprising determining whether the connection polarity of a network transmission line is correct with respect to a connection port according to a transition number of a signal received by one terminal of the connection port.

[c9]   9. The method of claim 8 further comprising the connection port determining that the connection polarity of the network transmission line is inverted when the number of signals is less than a threshold value.

[c10]   10. The method of claim 9 further comprising switching the connection polarity of the network transmission line when the connection polarity of the network transmission line is inverted.

[c11]   11. The method of claim 10 further comprising transforming each received signal into a pulse signal according to voltage levels of said each received signal for counting the number of the signal.

[c12]   12. The method of claim 11 wherein the pulse signal is generated by a Schmitt trigger.

[c13]   13. A detection circuit for detecting a connection polarity of a network transmission line of a receiver having a receiving terminal and a transmitting terminal, the detection circuit comprising:
a first counter for counting a first number of signals received by the receiving terminal of the receiver;
a second counter for counting a second number of signals received by the transmitting terminal of the receiver;
a multiplexer for coupling the network transmission line with the receiving terminal and the transmitting terminal; and
a controller for determining whether the connection polarity of the network transmission line is correct and signaling the multiplexer correspondingly to control the connection polarity for the network transmission line.

[c14]   14. The detection circuit of claim 13 wherein the controller signals the multiplexer for maintaining the connection polarity of the network transmission line when a difference between the first number and the second number is less than a threshold value.

[c15]   15. The detection circuit of claim 13 wherein the controller signals the multiplexer for switching the connection polarity of the network transmission line when a difference between the first number and the second number is greater than a threshold value.

[c16]   16. The detection circuit of claim 13 wherein each signal transmitted via the network transmission line is an MLT-3 coded signal.

[c17]   17. The detection circuit of claim 13 further comprising a Schmitt trigger for transforming each signal transmitted via the network transmission line into a pulse signal for counting the number for said each signal.